

REMARKS

In response to the Advisory Action dated August 11, 2006, Applicants amended claims 1, 5, 11, 19, 22-24, 27 and 64, and added new claims 72-75. Claims 13, 28, 33-63 and 71 were previously cancelled. Therefore, claims 1-12, 14-27, 29-32, 64-70, and 72-75 are presented for examination.

Claim Objections

Claim 24 was objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants amended claim 24 to depend from claim 19, and therefore request that this objection be withdrawn.

35 U.S.C. § 103

Claims 1-4, 6, 7, 9-11, 17, 19-22, 25, 26, 32, 64, 65, 66, 68 and 69 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pub. 2001/0047166 ("Wuchinich") in view of U.S. Pub. 2003/0045887 ("Sakurai"). As amended, Applicants' claims cover devices that include an ultrasonic probe "configured to produce cavitation along the longitudinal axis in a medium surrounding the probe during use." (Emphasis added). Wuchinich and Sakurai, taken alone and in combination, fail to disclose or suggest each and every limitation of Applicants' claims.

Wuchinich describes an ultrasonic tissue dissection system that produces both longitudinal and torsional motion at a tissue contacting tip of a resonator for the purpose of tissue dissection. See, e.g., Wuchinich, paragraph 62. Sukurai similarly describes an ultrasonic calculus treatment apparatus that transmits longitudinal and/or torsional vibration to a distal tip of a vibration transmitting member for contact with a calculus. See, e.g., Sukurai, abstract; paragraphs 42-51. Sukurai notes that the calculus is shattered or broken apart when the vibrating tip comes into contact with the calculus. See, e.g., id., paragraph 46. Neither Wuchinich nor Wuchinich describes an ultrasonic probe "configured to produce cavitation along the longitudinal axis in a medium surrounding the probe during use," as recited in Applicants' claims. Thus, even if a person of ordinary skill in the art would have been motivated to combine

the teachings of Wuchinich and Sukurai, which Applicants do not concede, that combination would not result in the devices covered by Applicants' claims. Therefore, Applicants request reconsideration and withdrawal of the rejection 1-4, 6, 7, 9-11, 17, 19-22, 25, 26, 32, 64, 65, 66, 68 and 69.

The Examiner also contended in the office action of May 18, 2006 that, in order to provide decreased procedure time and less residual tissue damage, a person of ordinary skill in the art would have been motivated to combine the teachings of Wuchinich, Sakurai, and Rabiner to achieve an ultrasonic probe that can be used to ablate biological material along a portion of the longitudinal axis of the probe using cavitation. However, a person of ordinary skill in the art would not have been motivated to combine the teachings of Wuchinich, Sakurai, and Rabiner to produce the devices covered by Applicants' claims. Wuchinich and Sakurai, as discussed above, describe systems that produce longitudinal and/or torsional motion at a distal tip of a resonator or vibration transmission member. Rabiner, in contrast, describes an ultrasonic medical device including a probe that transmits transverse ultrasonic energy along its length. See, e.g., Rabiner, paragraph 26. The geometry and operation of Rabiner's probe advantageously allows for ablation of tissue, by way of cavitation, along the length of the probe. See, e.g., id., paragraph 45.

While Rabiner describes a probe that produces cavitation energy, neither Wuchinich nor Sakurai indicate that their respective resonators and vibration transmission members can produce such cavitation energy. Instead, Wuchinich and Sakurai describe causing physical contact between the tip and tissue to dissect or ablate the tissue. See, e.g., Wuchinich, paragraph 62; Sakurai, paragraph 46. Thus, a person of ordinary skill in the art would not have expected to achieve cavitation with the systems of Wuchinich or Sakurai. In addition, the way in which the resonator of Wuchinich and the vibration transmission member of Sakurai are vibrated is quite different from the way in which Rabiner's probe is vibrated. While Wuchinich and Sakurai transmit longitudinal/torsional vibrations along their probes to provide action at a distal tip, Rabiner transmits transverse vibrations along his probe to provide cavitation along the length of the probe. Therefore, even if a person of ordinary skill in the art would not have been motivated to produce cavitation, the person of ordinary skill in the art would not have had a reasonable expectation of success in using Wuchinich's resonator or Sakurai's vibration transmission

member in the manner described by Rabiner to produce cavitation. Consequently, a person of ordinary skill in the art would not have been motivated to combine Wuchinich, Sakurai, and Rabiner in the manner suggested by the Examiner.

The Examiner stated in the Advisory Action of August 11, 2006 that Rabiner teaches that "it is advantageous to use ultrasonic vibration along the longitudinal axis of an ultrasonic probe to destroy tissue along the length [of the probe] and that this knowledge serves as a teaching reference for modifications that are possible to be made to a variety of ultrasonic devices known in the art." Applicants' acknowledge that Rabiner points out certain advantages to using ultrasonic vibrations along the longitudinal axis of his probe to destroy tissue. However, even if this knowledge would have motivated a person of ordinary skill in the art to try to produce ultrasonic vibrations along the longitudinal axis of other types of probes, which Applicants' do not concede, a person of ordinary skill in the art would not have been motivated to combine the teachings of Rabiner with the teachings of Wuchinich and/or Sakurai in a manner to produce the devices of Applicants' claims for at least the reasons discussed above.

Therefore, Applicants submit that Applicants' claims are patentable over Wuchinich, Sakurai, and Rabiner, whether taken alone or in combination.

Claims 5 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wuchinich in view of Sakurai and further in view of Rabiner. However, as discussed above, a person of ordinary skill in the art at the time of Applicants' invention would not have been motivated to combine these cited references in a manner to produce a probe configured to produce cavitation along a longitudinal axis in a medium surrounding the probe during use, as required by claims 5 and 23. For at least this reason, Applicants request reconsideration and withdrawal of this rejection.

Claims 8, 12, 14-16, 24, 27, 29, 31, 67 and 70 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wuchinich in view of Sakurai and further in view of U.S. Pub. 2003/0212331 ("Fenton"). However, Fenton fails to cure the deficiencies of Wuchinich and Sakurai discussed above. Therefore, Applicants request that this rejection be reconsidered and withdrawn.

Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Wuchinich in view of Sakurai and further in view of U.S. Pat. 6,433,464 ("Jones"). However, Jones fails to

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cure the deficiencies of Wuchinich and Sakurai discussed above. Applicants, therefore, request reconsideration and withdrawal of this rejection.

Enclosed is a \$225.00 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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